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THE CONQUEST OF TUBERCULOSIS.

The attack upon tuberculosis seems to be succeeding to a degree not dreamed of by advocates of the work ten years ago. The health statistics of wage-earners insured in the Metropolitan Life Insurance Company record remarkable declines in the prevalence of tuberculosis. These reductions, moreover, are greatest at those age-divisions of life where the tuberculosis death rate is highest, where it creates the heaviest social damage in terms of broken and dependent families, and where it removes wage-earners from industrial life at a time when productive effort counts for most. Such gains deserve detailed consideration and will give further impetus to this fruitful work.

TUBERCULOSIS AMONG WHITE MALES.

The pulmonary tuberculosis death rate for insured white males between 25 and 40 years of age in the two years 1919 and 1920 combined, was one-half of that for the combined years 1911 and 1912. At these age-divisions ten years ago, pulmonary tuberculosis prevailed at a rate of 4 to 6 deaths per 1,000 persons annually; during the past two years, the tuberculosis death rate of this age-division of life varied from 2 to 3 deaths per 1,000 persons exposed to risk.

And this is not all of the good news. Beyond age 40 and up to 65 years of age, there were reductions in the pulmonary tuberculosis death rate of white males varying from 44 per cent. at the period 40 to 44 years, to 27.5 per cent. at the age group 60 to 64 years. Beyond age 65, the decline in the pulmonary tuberculosis death rate in this group was not less than 12 per cent. At the age group 20 to 24 years, when the stresses of industrial life first begin to show their effects upon the tuberculosis death rate, there was a decline of 45 per cent.

in the death rate. Among adolescents of the ages 15 to 19 years, the reduction was 27 per cent. A substantial reduction was observed also among white male children under ten years of age.

Tuberculosis among White Females.

The facts for insured white females and for colored males and females tell practically the same story of success in the control of the factors causing death from pulmonary tuberculosis. For these groups, also, the greatest relative declines in the tuberculosis death rate occurred in the main working period of life. For the age-period 30 to 34 years, there was a reduction of 47 per cent. among white females. It is worthy of special comment that the savings in tuberculosis among this latter group were relatively less than among insured white males at all ages between 5 and 65 years, but after this age, the savings were twice as great as among insured white males. One of the anomalies of these recent figures is that there was an increase of about 3 per cent. in the pulmonary tuberculosis death rate of white females in the ages between 15 and 19 years.

Decline in Tuberculosis Death Rate of Negroes

There were greater declines in pulmonary tuberculosis mortality among negro children under 15 years of age than among insured white children. But it should be remembered that even in the most recent years the death rates for colored children are still from six to ten times as high as among white boys and girls. Beyond age 50, colored males show a greater decline in the death rate than do insured white males.

The following table gives the percentage reductions in the pulmonary tuberculosis death rate.

TUBERCULOSIS OF THE LUNGS.

Percentage Reduction, 1919-1920 from 1911-1912 Death Rates Metropolitan Life Insurance Company—Industrial Department.

Age Periods	WHITE		COLORED	
	Males	Females	Males	Females
All Ages—1 and over	42.4	22.2	30.7	21.3
1 to 4	14.4	22.2	40.8	55.0
5 to 9	29.5	10.8	32.1	28.5
10 to 14	7.4	6.3	11.0	11.9
15 to 19	26.5	**3.4***	19.7	9.0
20 to 24	45.0	11.8	33.1	15.9
25 to 29	49.5	24.9	38.7	22.0
30 to 34	49.5	46.6	33.6	27.2
35 to 39	50.9	37.9	39.1	29.3
40 to 44	43.7	32.1	31.2	25.5
45 to 49	33.8	28.0	24.7	19.5
50 to 54	30.1	23.8	32.4	36.7
55 to 59	32.8	22.0	38.2	10.2
60 to 64	27.5	24.8	35.0	30.0
65 to 69	11.7	24.3	24.6	**31.9***
70 to 74	18.4	32.6	17.2	11.0
75 and over	12.0	30.8	49.4	35.0

*Percentage Increase.

We may conclude broadly from these data that it has been possible for all of the community forces working together so to modify the environmental and perhaps also the hereditary factors in tuberculosis as to reduce very materially the number of lives formerly lost to society on account of this disease. At those age-ranges where environmental factors are not so important and where, perhaps, the constitutional element is uppermost (among children and the aged), the death rate has not declined so rapidly.

The chart on page 4 shows the changes which have occurred in the eight years.

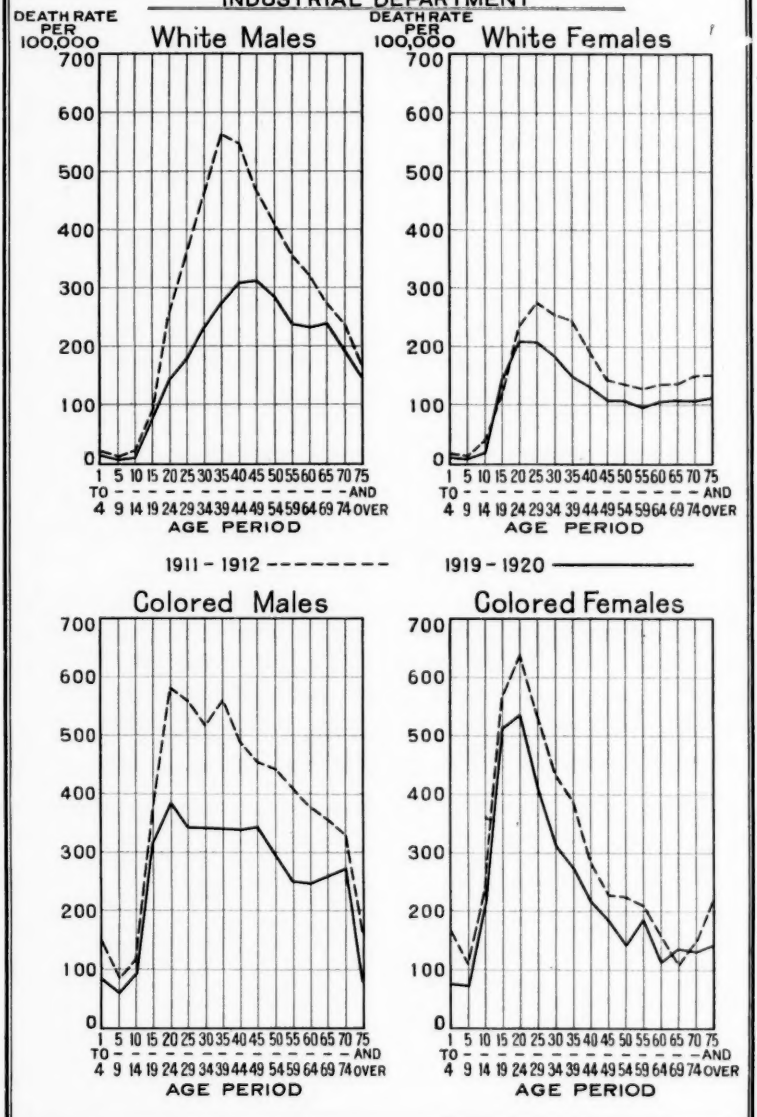
DEATH RATES PER 100,000 FROM

TUBERCULOSIS OF THE LUNGS

1911-1912 and 1919-1920 Compared

Metropolitan Life Insurance Co.

INDUSTRIAL DEPARTMENT



HEIGHT AND WEIGHT STANDARDS IN CHILD NUTRITION WORK.

Nutrition work for children has been very extensively developed in recent years; but it has not as yet been subjected to critical tests. In most places, this work has been based upon certain standards of height and weight, which, it has been assumed, indicate the healthy child. Children who are under-weight for their age according to these standards have been usually assumed to be malnourished, and care has been directed to bring such children up to the standard. The tables most extensively used in this connection have been those recommended by the Child Health Organization of America.

In the use of these tables, most nutrition workers have forgotten the limitations of which the authors themselves were well aware. For example, these standards reflect conditions primarily among native born children of native parents. They were never intended to test the degree of under-development of children of foreign stocks, especially Italian and Jewish children, among whom so much nutrition work is done. Children of these race stocks are uniformly shorter and lighter than are children of native parentage. There is, in fact, much variability in the heights and weights of children of the various races, and such standards as are used should take the racial factor into consideration. Nutrition workers should develop adequate measures of the height and weight of healthy children in the particular race groups among whom they work. This will avoid much confusion and will result in considerable economy of effort; because many children who are now classed as malnourished would, on truer standards, be found to be well within the limits for healthy children of their race.

In addition to the racial factor, there is another and perhaps more important element which has been very much overlooked in nutrition work, namely, the allowable normal departure from the average height and weight for age, irrespective of race. Healthy children of whatever nationality vary considerably from the average in height and weight. Thus, the weights of healthy children of seven may range from 37 pounds to 62 pounds and those of boys of fourteen all the way from 78 to 171. Even if we limit these boys to those who are 60 inches tall, we will find variations from 80 to 125 pounds, with the average weight at 97.5 pounds. There is, in other words, a "safety zone" on either side of the average which includes well nourished children. The important requirement in this work is not so much to

know the average weight for children of the various races but the limits of variation which will include the healthy children. It has been assumed that any weight more than 7 per cent. below the average establishes malnutrition and that an excess of 20 per cent. above the average is an indication of obesity. It is quite clear that 7 per cent. is not a safe lower limit until this has been established by the actual weights of children who are clearly determined to be malnourished on evidence other than weight.

It should be remembered that underweight up to a certain point is in itself not a defect. Among adults, underweight is indeed a distinct advantage at certain ages. Thus, if longevity is a good test of fitness, underweight even up to 50 pounds below the average is an advantage among persons forty-five years of age and over. The lowest mortality at certain age-divisions is not among those of average weight but among the so-called underweights.

It is, therefore, important to emphasize the need for more exact standards in carrying on nutrition work, especially in our large cities where so much is done among children of foreign extraction. And, in such work, more discretion should be used to exclude children who, although somewhat below table weight, are, nevertheless, healthy; that is, free from other symptoms of malnourishment. Underweight itself is not a final criterion of malnutrition.

LETHARGIC ENCEPHALITIS—SLEEPING SICKNESS.

The attention of health authorities has been focused on this disease since the influenza epidemic of 1918 when a large number of cases was first reported. At that time, the Metropolitan Life Insurance Company began to keep a detailed record of the fatal cases of lethargic encephalitis among its policy-holders. Some of the data gathered from this source are presented here to supplement what has already been published by other investigators.

The facts relate to fatal cases only, beginning January 1, 1919 and up to February, 1921. There were 395 deaths. These were reported from 35 states and seven Canadian provinces. No section of the country has been entirely free from this disease. But, the cases have been concentrated in the northern and eastern states of the country, New York showing 102 cases, New Jersey, 32 and Pennsylvania, 41. These three states alone had a total of 175 or 44 per cent. of all.

About one-quarter of the cases occurred in 1919; two-thirds occurred in 1920 and the rest in the first month of 1921. The number of deaths is rapidly increasing in recent weeks. The bulk of the deaths occurred during the first half of each year; in 1919, 53 per cent. and in 1920, 84 per cent. of each year's deaths occurred between January and June. Apparently, the cases are most numerous in the months when the respiratory affections and especially influenza are prevalent. In both years, the largest number of these cases occurred in March following closely upon a marked outbreak of the influenza. This fact has supported the theory of a causal relationship between the two diseases. It should be noted, however, that there were many cases of "sleeping sickness" in the fall and winter of 1919 antedating the fresh outbreak of influenza early in 1920. More recently, during the first two months of 1921, the cases have increased very rapidly with apparently no unusual prevalence of influenzal disease. It would appear, therefore, that there is no clear-cut time-relationship between the incidence of influenza and of "sleeping sickness."

There appears to be no sex difference in the relative incidence of the disease. The age factor, on the other hand, is a very important one. The deaths concentrate in the period of adult life. Thus, half occurred between the ages of 25 and 54. There are also many cases, over ten per cent. of the total, at ages one to four. The disease shows no marked attraction for the ages after 55. In all these respects, lethargic encephalitis shows a marked parallelism to the age distribution of pneumonic influenza. The average age at death of these 395 cases was 30.2 years.

Of the 395 deaths reported, 168 or 42.5 per cent. were returned as uncomplicated. Influenza was noted 75 times and was the most commonly reported complication. In addition, pneumonia and bronchopneumonia were mentioned 32 times. More than one-quarter of all the cases were, therefore, complicated with either influenza or pneumonia. Nervous conditions were mentioned 34 times, organic heart disease 15 times, Bright's disease 12 times.

There is considerable variation in duration of the cases. The duration in over 30 per cent. of the total was less than two weeks and in two-thirds of the cases under one month; only 12 per cent. of the cases showed a duration of more than two months.

It is hoped that the above facts may be found useful to those who are engaged in unravelling the complicated etiology of this disease.

HEALTH RECORD FOR FEBRUARY, 1921.

The very favorable health conditions which have prevailed for many months among Metropolitan Industrial policy-holders have continued during the month of February. The February death rate, 9.4 per 1,000, was actually lower than that for the year 1920, as a whole, although this month is usually one when we may expect the highest death rates. It is, of course, much lower than for February of 1920, when the height of the 1920 influenza epidemic was reached. This is a good indication that the health of the whole population of the United States and Canada is excellent.

The favorable situation is reflected in the low death rate for the principal causes of death. Tuberculosis, a disease from which higher mortality is expected in February than in almost any other month, again registered a considerably lower rate than that for the whole year 1920. The pneumonia situation, also, is entirely favorable. The mortality from heart disease is very much lower than for last February. The diphtheria rate still remains high, although a slight decline was registered as compared with January. This decline is so small that it would not be significant unless considered jointly with a decrease of 18 per cent. in January. It now looks as if a downward trend had at last set in for this disease. Scarlet fever caused 103 deaths with a rate of 10.1 per 100,000 exposed. This disease has shown an upward trend for the past few months.

Influenza was the reported cause of death in 130 cases with a rate of 12.7 per 100,000 which is about the rate prevailing before influenza became epidemic and virulent. The death rate for this disease has shown a slight but continuous rise since last November. This, however, may be expected at this season of the year and there is nothing as yet to indicate any return of the disease in the serious form of 1918, 1919 and 1920.

There was a slight increase in February in the death rate for diseases and conditions incidental to pregnancy and childbirth. The homicide rate to which we called attention last month, has improved very appreciably.

In the large cities of the country, the general population rate was 13.8 per 1,000, which is slightly higher than that for the preceding month. For February of last year, it was 27.7, this high figure being due, principally, to higher mortality from influenza and its complications.

At this time, the attention of health authorities is focused on cases of typhus fever and of lethargic encephalitis, which are being encountered in increasing numbers. Cases of typhus have been reported from Brooklyn, Cortland and Messina, New York; from Youngstown, Ohio, and Bell County, Texas. Health authorities at all the ports are taking every precaution against the spread of the disease through infected immigrants. The National health authorities are receiving the cooperation of the health departments of the seaboard cities.

Lethargic encephalitis is looming large both from the standpoint of morbidity and mortality. It has been reported from California, Connecticut, Georgia, Illinois, Maryland, Massachusetts, New York, Pennsylvania and Vermont. The states of Michigan and Massachusetts and the city of Cleveland have been added to the areas which have made it a reportable disease. During 1921, up to March 11th, 291 cases and 71 deaths from lethargic encephalitis occurred in New York City. Detroit recorded 72 cases during the first two months of the year.

There is an unusual amount of smallpox throughout the country, especially in the Pacific Coast region, the Middle West and the South. Up to March 10th, 40 cases were reported in Garrett and Allegany counties, Maryland. Up to March 7th, Chicago had reported 151 cases which equaled the total number for the year 1920. In Akron, Ohio, nearly 1,000 students are out of school on account of the prevalence of smallpox. In Columbus, Ohio, and Chattanooga, Tennessee, it was necessary to quarantine prisons on account of an outbreak. In Toledo, the situation became so serious that the Health Commissioner directed that all children in any school where smallpox had developed must be either vaccinated or excluded. In connection with the situation in California, the monthly report of the Pasadena Health Department issued a strong appeal for all citizens to be vaccinated.

Scarlet fever is also at an unusually high level. Reports of unusual prevalence come from many places.

Diphtheria caused the closing of a school in Baltimore in February. At Bay Shore, New York, there has been considerable alarm over the large number of cases of this disease. Unusual prevalence of measles is reported from sections of the Southwest and from the New England states.

Educational campaigns to instruct the public concerning cancer have been inaugurated in several places. During the second week of March, lectures and meetings were held in the schools of New York City. Public instruction about cancer is also being given in St. Louis and in Cincinnati. Tampa, Florida was recently added to the list of cities offering free radium treatment to certain classes of cancer patients.

The outstanding features in the recent sanitary reports from other countries are as follows: Lethargic encephalitis has been reported in England and Ireland. Haiti reports the continued presence of smallpox, the ports on the coast being particularly affected. Bubonic plague has been in evidence in Constantinople and measures against its importation have been taken by Roumania. The Porto Rican legislature made an emergency appropriation of $200,000 to be used for the control of bubonic plague, when this disease was discovered in that island. There has been a typhus outbreak in the Chinese province of Honan. It is estimated that the daily deaths from famine and typhus in the province total 1,000. Under date of February 17th, typhus was declared under control at Trieste. The United States Adriatic Fleet is helping to check this disease in Dalmatia. Italy is guarding against its importation.

The following table displays the mortality data for February in comparison with those for January, 1921, and for the whole year, 1920.

METROPOLITAN LIFE INSURANCE COMPANY.

Death Rates per 100,000 for Principal Causes, Premium-paying Business in Industrial Department.

MONTHS OF JANUARY AND FEBRUARY, 1921.

CAUSE OF DEATH	RATE PER 100,000 LIVES EXPOSED		
	Feb., 1921	Jan., 1921	Year 1920
TOTAL—ALL CAUSES	936.2	919.8	968.4
Typhoid fever	4.0	3.7	6.5
Measles	4.3	3.0	8.3
Scarlet fever	10.1	10.2	5.9
Whooping cough	5.7	3.8	6.5
Diphtheria	27.3	28.4	21.6
Influenza	12.7	10.2	52.3
Tuberculosis (all forms)	122.7	116.5	135.0
Cancer	65.7	66.6	68.3
Meningitis (all forms)	5.2	5.3	5.1
Cerebral hemorrhage	62.2	64.1	60.1
Organic diseases of heart	126.8	127.7	114.6
Pneumonia (all forms)	106.7	106.0	103.9
Other respiratory diseases	17.0	18.5	17.8
Diarrhea and enteritis	10.3	8.8	15.5
Bright's disease	74.8	68.9	69.4
Puerperal state	21.4	17.5	22.5
Suicides	7.4	7.7	6.0
Homicides	5.6	7.2	5.7
Other external causes (excluding suicides and homicides)	46.0	50.7	58.1
Traumatism by automobile	6.8	7.8	10.9
All other causes	200.1	194.9	185.3

Correspondence on the subjects discussed in these BULLETINS may be addressed to the Editor:

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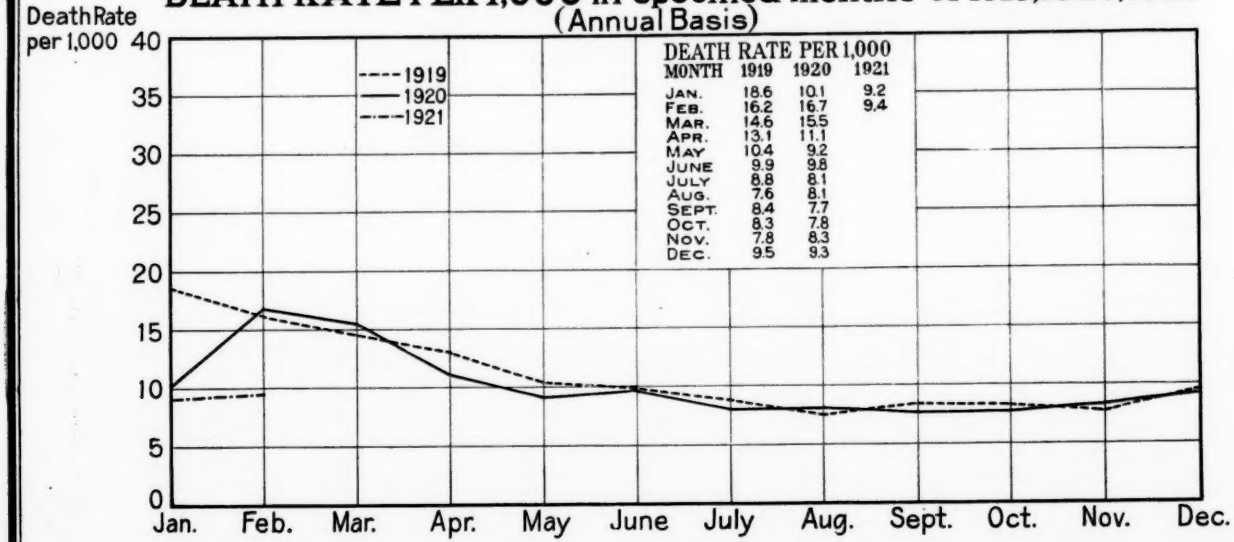
Metropolitan Life Insurance Co.

INDUSTRIAL DEPARTMENT

DEATH RATE PER 1,000 in specified months of 1919,1920,1921

(Annual Basis)



DEATH RATE PER 1,000			
MONTH	1919	1920	1921
JAN.	18.6	10.1	9.2
FEB.	16.2	16.7	9.4
MAR.	14.6	15.5	
APR.	13.1	11.1	
MAY	10.4	9.2	
JUNE	9.9	9.8	
JULY	8.8	8.1	
AUG.	7.6	8.1	
SEPT.	8.4	7.7	
OCT.	8.3	7.8	
NOV.	7.8	8.3	
DEC.	9.5	9.3	

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